

Upper Santa Ana Valley Groundwater Basin, Temescal Subbasin

- Groundwater Basin Number: 8-2.09
- County: Riverside
- Surface Area: 23,500 acres (37 square miles)

Basin Boundaries and Hydrology

The Temescal Subbasin underlies the southwest part of upper Santa Ana Valley. On the north, the subbasin is bounded by the Chino Subbasin, marked by the Santa Ana River and a set of low hills of crystalline rock near Norco. The eastern part of the subbasin is bounded by nonwater-bearing crystalline rocks of the El Sobrante de San Jacinto and La Sierra Hills. The subbasin is bounded on the west by the Santa Ana Mountains and the south by the Elsinore Groundwater Basin at a constriction in the alluvium of Temescal Wash. Average annual precipitation ranges from 14 to 16 inches per year.

Hydrogeologic Information

Water Bearing Formations

The water-bearing materials are dominantly composed of Holocene age alluvium deposited by streams draining the northeast slopes of the Santa Ana Mountains. The Santa Ana River has from time to time contributed deposits through the Arlington Gap along the northern margin of the subbasin (DWR 1934).

The specific yield varies from about 6 percent along the southwestern and southern margins of the subbasin to about 13 percent beneath the Santa Ana River and more than 14 percent beneath Temescal Wash near Corona (DWR 1934).

Restrictive Structures

The Elsinore fault zone lies along the western boundary of the subbasin, and the Chino fault zone crosses the northwestern tip of the subbasin. These fault zones are possible groundwater barriers (SBVWCD 2000).

Recharge Areas

Dominant recharge to the groundwater reservoir is from percolation of precipitation on the valley floor and infiltration of stream flow within tributaries exiting the surrounding mountains and hills.

Groundwater Level Trends

Groundwater flows toward the center of the subbasin and then northeast toward the Santa Ana River (SBVWCD 2000).

Groundwater Storage

Groundwater Storage Capacity. Unknown.

Groundwater in Storage. Unknown.

Groundwater Budget (Type C)

No information is available.

Groundwater Quality

Characterization. Water within the subbasin is predominantly calcium-sodium bicarbonate and has an average TDS content of 790 mg/L (SBVWCD 2000). Water from 20 public supply wells in the subbasin has an average TDS content of 753 mg/L and a range of 373 to 950 mg/L.

Impairments.

Water Quality in Public Supply Wells

Constituent Group ¹	Number of wells sampled ²	Number of wells with a concentration above an MCL ³
Inorganics – Primary	20	2
Radiological	17	1
Nitrates	20	13
Pesticides	17	0
VOCs and SVOCs	17	0
Inorganics – Secondary	20	2

¹ A description of each member in the constituent groups and a generalized discussion of the relevance of these groups are included in *California's Groundwater – Bulletin 118* by DWR (2003).

² Represents distinct number of wells sampled as required under DHS Title 22 program from 1994 through 2000.

³ Each well reported with a concentration above an MCL was confirmed with a second detection above an MCL. This information is intended as an indicator of the types of activities that cause contamination in a given basin. It represents the water quality at the sample location. It does not indicate the water quality delivered to the consumer. More detailed drinking water quality information can be obtained from the local water purveyor and its annual Consumer Confidence Report.

Well Characteristics

Well yields (gal/min)		
Municipal/Irrigation	Range:	Average:
Total depths (ft)		
Domestic	Range:	Average:
Municipal/Irrigation	Range:	Average:

Active Monitoring Data

Agency	Parameter	Number of wells /measurement frequency
USGS	Groundwater levels	2
USGS	Miscellaneous water quality	2
Department of Health Services and cooperators	Title 22 water quality	20

Basin Management

Groundwater management:

Water agencies

Public

Private

References Cited

California Department of Water Resources (DWR). 1934. South Coastal Basin Investigation.

San Bernardino Valley Water Conservation District (SBVWCD). 2000. *Engineering Investigation of the Bunker Hill Basin 1999-2000*.

Additional References

Wildermuth Environmental, Inc. (Wildermuth). 2000. *TIN/TDS Study - Phase 2A of the Santa Ana Watershed; Final Technical Memorandum*. San Clemente, California, July 2000.

Errata

Substantive changes made to the basin description will be noted here.